

**PROCESS AND DEVICE FOR THE REPRODUCIBLE OPTICAL REPRESENTATION OF A SURGICAL OPERATION**

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**Abstract**

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The process comprises the steps of creating three reference points at an object and taking a tomogram of the object such that the three reference points define a first set of positional data in the tomogram. The object is then non-rigidly placed on a support for operation thereupon by an instrument which is mounted at a flexible arm containing sensors for sensing the movements of an instrument tip. The instrument tip is placed at the three reference points in order to create a second set of positional data which are in a fixed relationship to the first set of positional data. When the instrument is inserted into the object placed on the support, the positional data of the instrument tip during the insertion movement are sensed and related to the first set of positional data via the fixed relationship between the first and second sets of positional data. The positions of the inserted instrument within the object are thus reproduced in the tomogram for indicating and displaying, monitoring and recording purposes.

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